LOADSTAR LETTER 64 #43

Fred S. Dart, Of New Image, Dies

Fred S. Dart.Feb 13, 1939 - Feb 19, 1997

The final hours of his life played out on Commodore BBSs across the country, with the sysops who ran his software, offering prayers. Fred passed away on February 19. Since then a memorial web page has been erected in his honor:

http://www.newimage.com/fred

The following text was taken from the web site: Fred Dart was probably the most widely known Commodore BBS SYSOP in America. He operated Port Commodore BBS for more years than I can remember, and openly provided his knowledge and support to users and sysops the entire time. Why? Because he wanted to. Because he enjoyed it. Because someone had to, and he could.

Of course, Fred was more than just a SYSOP. He had a wife and three daughters, and a successful 13 year career in the Navy, long before we all met him. However, most of the people I expect will be reading this will be the ones who talked to him over the years with some kind of connection to his BBS. There is so much more to say here, but I don't think it would do him justice. I would prefer to leave that to the sentiments page.

This page is here so that the many people who knew him can come and pay their last respects. Please fill out the form, and add your sentiments to the list. I'm sure Fred's family will appreciate knowing how many lives he touched.

Thank you.
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The Trouble With Fast Load Routines

by Jeff Jones. Without a fast load, it seems like you can sometimes type in a program faster than a 1541 can deliver it. The Commodore 64 needs a fast load routine. Your C-64 was designed back in a day when 512 bytes per second was considered quite fast. Back in the day, I remember waiting 15 minutes for chapters of Sport to LOAD from my tape drive. When I got a 1541 drive those chapters loaded in only about one minute. Now my modem is faster than that. The C-64 can pump thousands of bytes or data per second through serial port, but only if you tell it to go faster with a fast load routine.

The fast load is your friend. It not only loads your programs faster, it saves wear and tear on your disk drive because your disk drives will have to spin as much as fifteen times less than without a fast load. So if you're still operating without a fast load, waiting minutes to load programs, you have two good reasons to get one – extending the life of your drive's motor, and extending the life of your disks.

The trouble is, fast load routines rely on a multitude of schemes to speed up serial access beyond Commodore specifications. Disk based fast load routines are least desirable because you have to load them slowly, and then they may or may not work on the programs you run. Plus they're just not convenient.

Cartridges are better because they're ready instantly. Most of them have good wedges so that you can easily send disk commands and never have to type load "program" ,8. Most cartridges also come with handy built-in tools such as file copiers, disk copiers, monitors and sector editors.

The only problem with cartridges is compatibility. All of them work with 1541 drives, but few work with 1541 clones, 1581 drives, and the newer CMD FD drives. Warp Speed 2.0, which we *don't* have at LOADSTAR, is reported to be compatible with the 1581 drive. All the cartridges we have are not compatible. The Epyx FastLoad cartridge just locks up on the 1581. Super Snapshot works well with the 1581 though its file copier can ruin a 1581 disk directory. Super Snapshot also fast loads well with the FD-2000 though it doesn't fully support it.

Then there's JiffyDOS, arguably the best fast loader there is – but the most inconvenient to install. You have to crack open your computer, pull a chip (hopefully yours isn't soldered in) and insert CMD's upgrade. To top it off, you still have to install a chip in your 1541 or 1571 in order to realize the speed increase. Fortunately the first drive chip is free. The chip is compatible with most anything, and at one time dared offer a money back guarantee if you found a program that wouldn't work with it. Needless to say that guarantee is rescinded. There are now a handful of programs that are incompatible, including HESKIT, which is awful because HESKIT is such a great package.

I resisted JiffyDOS for quite a long time because I was so satisfied with Super Snapshot. I reluctantly added JiffyDOS because it was part of my job. Instantly I found that JiffyDOS worked well with Super Snapshot, It made Super

Snapshot work even faster. Soon I was finished with Super Snapshot as a fast loader, and kept it disabled until needed. To this day I keep it in the background. Unlike other fast loads, which only speed the LOAD and SAVE routines, JiffyDOS speeds all disk access, meaning directory and even your REL file routines operate many times faster. Also, routines that disable and slow down fast load cartridges, such as sys65418, have no effect on JiffyDOS. I recommend JiffyDOS even if you already have a favorite fast load cartridge. You don't need to order JiffyDOS if you're ordering RAMLink or the SuperCPU. These devices come with JiffyDOS built in.

CMD is taking its lumps in comp.sys.cbm. Frankly there is a grassroots feeling that CMD has gotten too big for its britches, and is the rude 800-pound gorilla. The only thing I've ever had against JiffyDOS was a set of nearly useless function key presets that seriously needed re-defining. I also felt that the F-keys were too difficult to re-define, and prone to being knocked out if a program does much poking around. Other than that, JiffyDOS seems to be the perfect fast loader.

I've spoken with CMD about a cartridge option for JiffyDOS and it isn't going to happen. Of course years ago I also talked to CMD about an accelerator, and they said that *that* wasn't going to happen. An otherwise featureless JiffyDOS compatible cartridge with an FD or HD would be great for those people too squeamish to modify their computers. Those too financially strapped to buy a RAMLink or SuperCPU would appreciate a cartridge, too. The two high-end devices give you JiffyDOS without a single screwdriver. I've found CMD a neurotically thorough company, readily taking lumps for delayed releases while they tirelessly attempt to make their products compatible with Commodore computers that don't operate to specifications. This is what delayed the SuperCPU for so long.

What surprises me are public posts like these in comp.sys.cbm and comp.emulators.cbm:

Marko: I never wanted to have any CMD equipment (not even JiffyDOS, although it's not hardware), and after this incident, I will instruct everyone to stay away from CMD. You won't need their HD's; it's much cheaper to store the files on a normal PC hard disk/ MO disk/whatever. You won't need their SuperCPU; if you want to run big applications, you have a bigger selection of them for other platforms, and the hardware they run on has a better performance to price ratio. Someone claimed that CMD is not the "big brother", but it actually is, for those who want to cope without modern hardware.

Tony: I made the error of letting myself get talked into buying BuggyDos for the 128D a few years ago. Having expected a lot more than I got, I was quite disappointed. Reporting my displeasure turned out to be a waste of time..

At least part of CMD's problem is that they have been getting their corporate asses kissed by the fawning C= community to the extent that they now consider themselves the gods of 8 bit computerdom. It will be interesting to see where they run to when it all comes crashing down.

Incidentally, I really enjoy the cosmopolitan nature of this conference with its inherent diversity of opinion. I expected my original negative response to be distinctly in the minority and am therefore quite delighted to find that many others expressed a similar point of view to my own.

Tony -

There's even more: Check out this discussion between Todd Elliot and Marko Mäkelä:
>>>>> "Todd" == Todd S Elliott <eyeth@erols.com> writes:

Todd: Mr. Mäkelä - If someone were to offer you the entire CMD line of hardware accessories for free, even for a month or so, you probably would accept the offer. But, after a month or so using these stuff, I'll wager that you would never return them.

Marko: I wouldn't be so sure of that. I certainly would not keep the SuperCPU, because in my opinion, a C64 running with a CMOS processor is like running a C64 emulator, with the exception that the emulator supports some features of the NMOS 6510 better (and some worse).

Also, I've seen GEOS a couple of times, but I didn't like it, and wouldn't use it, even if I had the right hardware. I doubt that GEOS would be usable enough even with a turbocard, like the SuperCPU. Also, I don't think that I would use a CMD hard disk either. It would be too difficult and too slow to back it up, or I would need to write a driver for it so that I could read/write the files with my PC. What else has CMD created? An RS-232 adapter? No thanks, I already have one, and don't use it. A RAM expander? No thanks, I already have one (self-built). I really don't need their stuff.

Todd: Last, I love C= hardware just as much as you do. I still own a classic 64 with an unmodified 1541. No frills. Just me and the original beast, trying to conquer its quirks and intimate intricacies in pure ML. Simply put, from the ML perspective, it is sheer computing nirvana. But, it certainly doesn't mean that I foreclose my horizons due to this "classic C=" myopia by denying myself the pleasures and power that CMD peripherals offers. And gladly, with these powerful CMD peripherals, I am enjoying the best of both worlds.

Marko: I think that I've gone further. For me, the C= 8-bitters are already dead as useful computers. They only have the hack value for me. I haven't done any productive work on them since 1990 or so. All I've written since have been all kinds of utilities for file transfers, cross development and so on. The only works I've written just for C= computers since 1990 is the Veni vidi Vic! demo last year. And I wouldn't call that productive work either. Like others have pointed out, the C= scene is divided into two, or maybe three: First, the "die-hard power users" who want to cope with 65xx based hardware (although 65C02 and 65C816 are not true 65xx IMO) and buy those CMD products. Second, the demo scene

wants to have the hardware as it was originally built by Commodore. And third, there are the emulator folks who just want to experience the nostalgic feelings from their youth. The borders between these groups are not clear, as some demo folks are coding on emulators, and some power users are part of the demo scene, and so on.

I wouldn't care if CMD went out of business. Commodore's bankruptcy didn't change anything either; the hardware wasn't improved since 1982 (I don't see the cost-reduced models an improvement, because they are more difficult to repair), and I have enough spare parts now. Well, CMD's bankruptcy would have bigger consequences to these power users.

Someone said in his follow-up that I shouldn't tell you which system to use. I didn't, I just said "more modern hardware", meaning e.g. an Amiga or a PC clone running a free operating system, like Linux. No, I didn't tell you to use e.g. Big Bill's software. We've already seen how buggy BASIC 2.0 is; why should anyone use anything from such a company?

And that's not all. Radioactive Warrior (radwar@orl.mindspring.com) wrote: Look, people know how I feel about this issue and at the risk of harping I will reply to these absurd statements...

First, I am not an "ignorant JiffyDOS user!" I have v6.01 and have looked at the way the fast i/o routine was put together and it is ultimately inferior to the routines used in SSv5.x... Now true, SSv5 is a 64 kb ROM enhancement and comparing the small patches within the 8k KERNAL ROM that of this massive ROM add-on is a bit unfair but at the same time, how much did you pay for all those JiffyDOS upgrade ROMs? I paid $65.00 once for a hell of a lot more than you got from JiffyDOS (ie. screen-dump, monitor, game trainer, cartridge resident terminal, mem.archiver...) and I didn't need to pop one single chip! I put the cartridge in and have a nice system, take it out and have a stock c64! The "big" deal with JiffyDOS is that it speeds up the GETBYT routine as well as the load routine so the file packed loaders pull data in quicker- IS EVERYONE PAYING ATTENTION- This is nice compared to the stock c64 GETBYT speed, granted, BUT this is a far cry from the possible throughput!!!!!! -that is my point but I fear you are too dull to get it.

Nuff said,
Radioactive Warrior

The need For CMD Devices

By Jeff Jones. I have to say that I can't understand where Marko is coming from yet he does have supporters. I have a Commodore emulator or three, and they are great for capturing images and saving them as gifs. Other than that, they are clumsy for programming and troubleshooting. I can't endorse them as a platform. My PC emulator does run about six times faster than my C-64 – for $2000 plus the emulator software. This includes all the problems that come with the emulator, which is not as conscientiously optimized as the Super-CPU. For instance if I have my PC emulator running fast, I can't type. The keys repeat five times too fast. My C-64 runs 20 times faster with the SuperCPU with very few problems for only $200. And the keys don't repeat any faster.

Some may feel that my nose has become unduly brown since I'm about to focus on one of our major advertisers yet again. I ask our paragons of piety – and cynicism – to please bear with me. There is a higher purpose. Ten years ago, I purchased my 1541 drive from Kmart for $200. It was a piece of junk then, and it is now. Back then it was about the only choice we C-64ers had. Oh, a couple of years later we had the 1571 as an option, but it wasn't much better. We also had the totally finicky MSD drives, heavy enough to anchor the USS Missouri, with downright dangerous sharp metal corners. Other third party 5.25 inch drives came and went thanks to Commodore's enthusiastic litigious help (read lawsuits). So wouldn't you know it, in the end 1541s and 1571s still dominate the C-64 market. Not that there's an actual "market" for these drives. They're not made anymore, but they're being sold and recycled.

Commodore made an effort with the 1581 drive, but the effort was short lived. Despite rave reviews, Commodore pulled the plug long before the wave caught on. Back went the people to 1541-II purchases. 1571s faded into obscurity, only to resurface in spurts. Now and forever, there will be no more new 1541s, 1571s and 1581s.

There's one more thing that might not be manufactured any longer in the next few years. That's the venerable 5.25 inch disk. Make no bones about it: MAC was smart enough *never* to have supported 5.25-inch disks. The Amiga offered a 5.25-inch drive in the beginning only to support IBM 5.25-inch disks. As soon as IBM introduced the 3.5-inch format, Amiga dropped the 5.25-inch external drive from its line like a hot potato. Right now you won't find a new computer that comes with a 5.25-inch disk. Oh, you might find a refurbished MS-DOS unit with a 3.5 and 5.25-inch drives mounted, but not *new* units.

Very soon it won't be profitable for the likes of Microsoft to support 5.25-inch drives at all. The 5.25-inch disk holds one quarter as much data at the same price. So when we send you the Compleat New testament on one 3.5-inch disk, it's easier to manufacture and use. Don't fool yourself: Manufacturers *won't* keep making these disks just for us Commodore users. A few thousand of us purchasing ten or twenty disks per year just isn't enough.

LOADSTAR is beginning to have trouble purchasing these disks. Even double density (low density) disks for the 1581 are getting harder to come by. The high density 3.5-inch disk is becoming the standard – but a lot of 1581 drives can't handle them.

A few readers have noticed that our 5.25-inch disks have two index holes. Though the 1541 and 1571 apparently don't require an index hole on the left side of the disk, our commercial copiers do. They strobe a light through the index hole and time the light to make sure the disk is spinning up to speed. The speed of 1541s is manually adjusted with screwdriver. They don't need the hole because they assume they're always up to speed. So while you can flip over a disk and format it, our pro copiers think that the disk isn't spinning at all, since the index hole isn't there.

We'll have to buy "normal" single-indexed 5.25-inch disks soon, and somehow convince our commercial copiers to write to the backs of all those disks. Of course if we were shipping to majority 1571 users, there would be no problem. We could easily ship LOAD-STAR on two 1571 disks. Our copiers recognize that format and can write to it on regular disks. This may be an option for 1571 and 128D users in the future.

Sometimes I envy the IBM world. It's good and fickle. Things happen fast. They merely suggest that 5.25-inch disks "have disadvantages" and people toss them out the window like SCTV. I wish that would happen with the C-64. The FD is a truly new and reliable drive for which you'll find premium disks and mechanisms for years to come. Same for the CMD hard

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drive. Gone bad? Buy a SCSI drive. Pop out your old CMD mechanism and pop in the new mechanism. FD drives use TEAC mechanisms. I'd be willing to wager that a number of brand name mechanisms would work as replacements. Just try getting a new mechanism or even a ROM for a 1581 or 1541. We've had service centers contact us looking for sources.

True enough, there seems to be a lot of 1541s still floating around, but I say don't buy them. If you still have one working 1541/71, that's enough! Go ahead and get an FD-2000. With it, you can back up all your 1541 disk onto 1541 emulation partitions.

I personally hate 5.25-inch disks. For the kind of work I do, they simply don't offer enough room. Once I save a few versions of a program to disk, it's full. The technology just isn't there. With FD drives, you have almost ten times the room on a single disk (five times with low density disks).

It's tax time. Use that refund to re-subscribe to LOADSTAR – and get a *real* disk drive. Buying a house or a car? Borrow a little extra money ($200) and get an FD. Blow off that dust on your VISA card and join in. If IBMers can do it, so can we. We've got to make the mass switch to 3.5-inch. Commodore has had 3.5-inch drives available for over eight years! Right now, there is an ever increasing number of new FD-2000s and an ever decreasing number of 1541/71/81s.

While you're at it, change your subscription to 3.5-inch. You'll enjoy LOADSTAR more on 3.5-inch disks. It's faster, there's no disk swapping, and we know that we can support that format into the next century. Furthermore, it's good for the market for us to buy NEW drives, not recycled unsupported 1541/71/81s. Imagine what would happen to our economy if no one purchased a new car. This is something that CMD is a little too modest to say, but we really *should* all have an FD drive. It's our only choice for a removable storage medium – and it's currently a better medium than the IBMers have.

Check CMD's ad in the LOADSTAR LETTER for prices.

Why is My CMD FD-2000/Hard Drive As Slow As A 1541?

By Jeff Jones. The answer is simple: You need JiffyDOS. The drives aren't slow. Your commodore LOAD routines are. With Super Snapshot you might get *some* fast load benefit, but you really need JiffyDOS. CMD didn't do this to make more money. In fact you don't need JiffyDOS in the 128 mode. No serial device will operate fast on a C-64 without a fast loader. JiffyDOS was the obvious choice for the 64 mode. Imagine the comments if CMD sold devices that weren't compatible with their own fast load.

Emulation Partitions: How To Create Them And Use Them

by Jeff Jones. LOADSTAR has probably received as many questions about CMD Drives as CMD has. The number one question seems to be "How can I copy my (insert program name here) disk to my FD-2000? MCOPY won't let me, and when I try FCOPY, it copies it, but sometimes it won't work."

The problems are easily understood once the laws of partitioning are understood, partieularly the specialized partitioning available to CMD device users. Before we jump into emulation partitions, let's devote a few paragraphs to the history of partitions:

To partition is to divide into parts; to restrict movement or access. We've all done it as children: Drawn a line across the bedroom that barred another sibling from our side of the room. This makes our area smaller than it would be if the area were common, but usually serves some higher (or lower) purpose. Partitions are a part of life for hard drive users. You could say that partitioning makes a hard drive believe two things:

- It's smaller than it really is.
- It's many more drives than it really is.

It used to be that partitions were used mainly because DOS could only address a maximum amount of memory at a time, typically 16 meg. Since no one would buy a teeny tiny 16 meg hard drive after the early 80s, larger drives were sold, but they still had to be partitioned into many "virtual drives." This seemed quite natural since partitions force a modicum of forethought (read organization) in setting up a hard drive, if only because the partitions have to be named. Since the partition sizes are variable, you'll devote more space to those tasks that need more space, and vice versa.

It was soon discovered that there were benefits to partitions, and though many multi-megabyte MS-DOS MAC and AMIGADOS systems can now address hundreds of megs of drive space, people still partition their drives for many reasons, a few of them being:

- Protection of whole sections of a drive from the corruption of another directory
- Faster access. Partitions are in smaller areas, and the drive head will perform above its specifications since it will never move the length of the media while accessing a file.
- Some commercial programs require a whole disk unto themselves, or at least that the name of the disk be what it expects.
- Smaller directories are easier to navigate. The benefit of subdirectories diminishes when the number of subdirectories becomes overwhelming.
- (MS-DOS only) Smaller partitions use smaller blocks.

8-bit Commodore users have one more reason to partition, not out of necessity, but because we have the OPTION of emulating three floppy drive types:

- 1541 170K
- 1571 340K
- 1581 808K

These CBM partitions are different from CMD NATIVE partitions, which are variable in size, and allow for true subdirectories. On RAMLinks, RAMDrives and CMD hard drives you must use a program to produce an emulation partition. On the FD-2000/4000 you can create an emulation 1581 partition simply by inserting a blank disk and formatting it:

```
open15,dv,15,"new:disk name,id"
```

This means that an FD drive will act as a 1581 if you don't do anything special. To format a high density disk enter the following (preferably with a high density disk inserted):

```
open15,dv,15,"new:disk name,id,hdn"
```

This means that an FD drive will act as a 1581 if you don't do anything special.

In order to create 1541/71 partitions on any drive, you must use the programs supplied by CMD to create partitions:

Hard drives come with pre-formatted emulation partitions of every type, including 1581C CP/M partitions, which probably a dozen people in the whole world use. These partitions should be empty. Assuming you have JiffyDOS or some sort of DOS wedge, you can move to the partition and check it by typing:

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@CPpartition number

You can look at the directory by typing:

@$

You can view the partition directory by typing:

@$=p

This gives you a different kind of directory. Here's how my partition directory looks on my RAMLink:

```
255 "ramlink      " rl 1h
0   "system"          sys
1   "loadstar work"     nat
2   "utilities"         81
3   "scratch 41"        41
4   "scratch 71"        71
5   "future projects"   nat
```

Again, my RAMLink partition directory didn't look like this until I deleted the default partition (and all that was on it) and made my own partitions, native and emulation.

Partitions take up real space. You can't create an emulation partition unless you have the minimum blocks free for it. Hard drives come with space available for emulation and native partitions even though they already have many pre-formatted partitions. RAMLinks and RAMDrives create one big partition when powered up for the first time.

For the third time, this is most misunderstood about RAMLink and RAMDrive partitioning: When unpacked and first powered up, RAMLink and RAMDrive will create a CMD NATIVE partition that fills all available blocks. So if you want emulation partitions, you must delete the big default partition and create smaller ones.

The partition directory gives you what looks like a regular directory, with no blocks free. Instead of block lengths and file names, you get partition numbers and partition names. Instead of filetypes, you get partition types. The "81" denotes a 1581 partition. The "41" denotes a 1541 partition. I call these partitions "scratch" because I consider nothing in those partitions important (even if it really is important). This frees me to copy new stuff there without looking. If it is important, I'll put it on a backup disk or HD. But, hey, I digress.

FD-Tools: "Formatting Options"

If you plan on having 1541/71 emulation partitions on FD-2000/4000 drives, you absolutely must use FD-TOOLS to format your disks. Detailed instructions on the use of FD-TOOLS are included on page 85 of the FD manual. The disks MUST be formatted as CMD Type directories. CMD looks a lot like CBM. *Don't* choose CBM. CBM means 1581 only.

If you select a CMD partition you'll be offered to choose density. You CAN format regular low density disks as HD (high density disks) without having to buy a HD notcher. This will work only if the disks are high quality disks. Here at Softdisk, low densities format into HDs about 60% of the time. Personally I don't recommend it. If you're using high density disks, you'll be offered:

1. 1 Native partition that takes up all available space on the disk.

2. One 1581 emulation partition. One and two 1581 partitions will be offered with 1.6 meg (HD) disks. With 3.2 meg (ED) disks, you get the additional option of four 1581 partitions.

3. "None." Just format the disk and make no partitions. You would choose "None" if you want to add 1541/71 partitions.

If you choose "None", the disk will be formatted, but there will be no partitions available. The disk will be useless until you create some partitions. We're going to choose "None" and make our own partitions.

DEVICE	PROGRAM
FD-2000	FD-TOOLS
FD-4000	FD-TOOLS
CMD HARD DRIVE	HD-TOOLS.128 or HD-TOOLS 64
RAMLINK	RAM-TOOLS
RAMDRIVE	RAM-TOOLS

The tools you'll need with CMD devices

FD-Tools: Partitioning Options

By Jeff Jones. Here is where you go to mix and match partitions on your formatted FD disk. Select CREATE PARTITIONS and follow the prompts to create all the partitions that you want (or can fit) on the disk.

When you choose CREATE PARTITION, you're offered the chance to select the partition number of the partition you'll be creating. The number already there will be the lowest available. Just hit RETURN to accept it.

Next you select the partition type:

- NATIVE
- 1541
- 1571
- 1581

Use + and - to change the type, and RETURN to accept.

FD-TOOLS will keep you apprised of the number of blocks free for new partitions. Once you create a 1541 partition, you can then use MCOPY to copy a 1541 disk to that partition. If you create a 1581 partition, you can then copy a 1581 disk to the 81 partition. You can *not* copy to an unlike partition. The one exception is that you can copy a 1541 disk to a 1571 partition, but not vice versa, for obvious reasons! The 1541 on the 1571 partition won't show proper blocks free until the partition is validated. The option to copy a 1541 disk to a native or 1581 partition won't even come up with MCOPY.

You CANNOT use MAVERICK or some other fast disk copier to copy disks. MAVERICK wasn't made to deal with emulation partitions. You MUST use MCOPY, which is supplied.

CMD NATIVE partitions are more useful and versatile than emulation partitions, but every once in a while you'll need to copy a 1541/71/81 drive to a CMD device. If you have a 1541/71/81, you might want to create companion partitions on your CMD RAMLink/RAMDrive or HD. If you have an FD, your partition table varies with each disk. You might want to have a "1541" disk with 4 1541 emulation partitions on one disk. High density? You can squeeze 8 1541 partitions onto one disk.

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Let's review a couple of important concepts:

- You must delete your default RAMLink/ RAMDrive partitions with RAM-TOOLS before you can create any partition. Naturally you should file copy the contents to a safe place first.
- You must create a partition that is of the same type as the disk that you would like to copy to your CMD device.
- CMD supplies everything needed to accomplish this goal. The disk included with your CMD device is very important, and should be copied.

Hopefully this clears up a few misconceptions about how CMD devices store data. If not, continue to write with questions, and I'll gladly answer them.

1541 Software On FD-Drives "The FD-2000/4000 as archive units"

By Jeff Jones. "How do I use my existing software on my FD-2000? What am I going to do when my 1541 totally breaks down?" Very common questions with simple answers. The FD-2000/4000, and all CMD devices offer excellent archive options in the form of emulation partitions. Unlike regular archives, you can actually USE the programs and data stored in emulation partitions.

Emulation partitions may seem like a very complicated and possibly flaky option, but really they are not.

Protected disks may not work in emulation partitions. Just about any disk that can be duped with a whole-disk copy can be copied to a CMD native partition. For instance most of the old TIMEWORKS line should copy fine with MCOPY because it's only protected against BAM copies. Remember those? If that unprotected disk uses custom fastload routines, it may fail. Look for files called "slow load" or similar.

If the disk must be nybbled in order to be successfully copied, it's too protected to work on a CMD emulation partition. If it uses a software fast loader, you should try to use the boot that doesn't use the fast loader. You might want to look into SUPER SNAPSHOT to capture it. The program may also be de-protected – but deprotector programs are pretty rare.

Moving Between Partitions

Assuming you have JiffyDOS, you can type the following to get a partition directory:

```
@$=p  <RETURN>
   You'll see something like
this:
255 "cmd fd    " fd 1h
0   "system    " sys
1   "sport disk 1 "  41
2   "sport disk 2 "  41
3   "sport disk 3 "  41
4   "sport disk 4 "  41
5   "sport disk 5 "  41
6   "sport disk 6 "  41
```

This is the partition directory to the master of the 1541 version of my novel on disk(s). Instead of six separate 1541 disks, I have all the masters on one 3.5-inch disk.

To move between partitions, look at the number on the left that would normally be block size. This is your partition number. So if I want to move to the partition with sport side six on it, I would type:

@cp6

This is the change partition command. You would move to partition 1 with:

@cp1

And so on. As stated in the partition and subdirectory lesson, originally published on LOADSTAR #117, all CMD devices can be "partitioned." This means that one device can be made to think that it has many separate disks onboard. A 1541 partition is really a regular CMD partition with a few parameters changed:

- Directory is on track 18
- BAM starts on Track 18 sector 0
- 664 blocks free

So you see that the only difference between a 1541 emulation partition and a CMD native partition is that the drive expects directory data to be in a certain place – the same place where a 1541 would put or get directory data.

Remember, this is all going on in the background. You have no need to know where the directory track is or where the BAM is. In fact, I hated mentioning those things because using emulation partitions is about as simple as creating them.

Understanding Partitions

A CMD Partition is a lot easier to use than a 1581 partition. There is no need for fear. It DOES help to have JiffyDOS because you'll do better with a wedge than typing open15,dv,15,"cp1" every time you want to change partitions.

Creating 1541 Emulation Partitions

By Jeff Jones. If you have an FD-2000, you can fit four 1541 partitions on a regular low density 3.5-inch disk. On a high-density disk, you can store eight 1541 disks. The FD-4000 allows these options plus with ED (enhanced-density) disks, the FD-4000 can store a whopping sixteen 1541 disks on one 3.5-inch disk.

The FD-2000 and 4000 have the ability to format disks with CMD native mode partitions or as many 1581 directories as will fit on the disk. However with all CMD devices, you need to use a program to create 1541 partitions. In the case of the FD-2000/4000 you'll need FD-TOOLS.

FD-TOOLS is supplied with every FD-drive on a disk called FD UTILITIES. Make a backup of this disk. You can file-copy all of them to a 1541 disk using FCOPY, which is also supplied on FD UTILITIES.

Since FD-TOOLS is well-documented, I won't go into detailing its use. I will say that before you create a disk that you will fill with 1541 partitions, you should first use FD-TOOLS to format it with NO partitions.

To do this, choose DISKETTE FORMATTING OPTIONS. You MUST choose a CMD format disk. Choose NONE for the partition option.

Once you've formatted the disk, you can begin creating 1541/71 partitions on the disk using PARTITIONING OPTIONS.

MCOPY

MCOPY is what you'll use to copy your 1541 disks to your 1541 partitions. It's better and faster to MCOPY than to FCOPY because with MCOPY you'll be sure to get the entire disk copied. Some software may hide data outside of files and allocated blocks.

If you own any CMD drive, you own MCOPY. It is compatible with all CMD devices in all configurations except the SuperCPU copying to or from any RAMLink partition. You'll have to switch turbo speed down before copying a RAMLink partition.

Believe it or not, there is little more to say about transferring your 1541's to CMD drives – except that you should be careful of formatting low density disks as high

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density. We've found that about 60% of low density disks can indeed be formatted as high density. Some low density disks actually ARE high density, made on the same assembly line as low density but marked differently. The trouble is that true low density disks which are good enough to format as high density can sometimes lose data over time. The particles on a true low density disk aren't as fine as on a true high density. The same is true for extended density. You might get an FD-4000 to format a regular HD disk as an ED disk – but I wouldn't put anything important on it.

The CMD FD-2000

By Jeff Jones. The CMD FD-2000 and 4000 are 3.5 inch disk drives sold by CREATIVE MICRO DESIGNS. Currently the FD-2000 is the only floppy drive still being manufactured new for the Commodore 8-bit line. The FD-4000 was discontinued because the ED disk medium and mechanism never caught on in the PC world. Rather than have an unreliable supply of mechanisms and disks, CMD let the format go though they still have a number of ED disks in stock.

Both these drives are incredibly compatible with existing software, including 1581 software and fast loaders, and they're downwardly compatible with the 1581 format. In partitions, you can even create REAL, 100% compatible 1541/71 partitions. More importantly, the drives both support DOUBLE SIDED HIGH DENSITY disks (DS,HD), which yield up to 1.6 megabytes of storage (twice that of the 1581!). These are those disks your 1581 couldn't format so you had to return them.

The FD-4000 goes one step further and supports a newer format called DOUBLE SIDED EXTENDED DENSITY disks (DS,ED) which gives you 3.2 megabytes per disk (that's four 1581 disks)!

These drives are pretty fast with JiffyDOS or in the 128 mode. Just like the HD and RAMLink before them, these drives were well thought out. They work exactly as advertised. I haven't had a software problem yet. It's like a slower version of RAMLink.

Not surprisingly, I find the drives reliable. The FDs are a essentially a CMD hard drive based on floppies. Formatting the disks with FD TOOLS may seem a bit complicated, but it's only because you're doing a low level format on a DOS that's sophisticated enough for a hard drive. In other words, you have intelligent decisions to make. But if you just want a 1581 disk, you can plop in a blank disk and type @n0:diskname,id as if you had a 1581. If the disk is already formatted (with the default partition as a 1541), it'll format in the default partition as a 1541, not the whole physical disk.

I use my FD-4000 and HD-40 primarily to backup projects that are actually worked on in RAMLink, which is my main drive. This frees up the hard drive for more important things. Of course you can quite merrily use the FDs as primary drives if you don't have HDs or RAMLinks.

The drives have DIP switches for device number. Mine is set up as device 11 but I can press the SWAP button to make it 8 or 9. It feels like using a super-1581 – except my main partition has about 6000 blocks free. In that partition I have many EASILY creatable and accessible subdirectories. I'm in one now. The other directories are simply directories for all of my other LOADSTAR-related work (MCOPYed from my RAMLink). Each subdirectory is kind of like a separate disk, except they share a common blocks-free count for the partition they are in. They will all be wiped out if I format the partition they're in.

My second partition emulates a 1541 disk, right down to the directory, BAM, and 664 blocks free. Cool. I can MCOPY a whole 1541 floppy to the second partition if I want to. As far as I know, no other computer format offers emulation partitions. I think of it as a little hard drive. Everything works EXACTLY as I expect it to – except it happens faster than a 1581, and slower than a hard drive.

The designers of the FDs and its operating system obviously thought it all out and beforehand. The manual is as thorough as the CMD HD manual, coming in a three-ring binder with well over 100 pages, complete with diagrams. The manual puts most any CBM manual to shame. In fact, any CMD manual virtually replaces a CBM drive manual. I rarely look into an actual 1571 manual. The CMD manual usually suffices.

How fast is it in use? It took me several minutes to file copy an issue of LOADSTAR #105 to a native FD partition. The issue then booted in 10 seconds on the FD-4000. At first that seemed slow, but it takes some 17 seconds with a 1571 and JiffyDOS. That's nothing to sneeze at for a floppy. I'm just spoiled by RAMLink, which boots LOADSTAR in about two seconds. With the SuperCPU

in, it's virtually instant. Even the hard drive, which boots LOADSTAR in a staggering four seconds, seems slow compared to RAMLink.

As with the CMD hard drives, all access will be faster. You really should get JiffyDOS. If you get a RAMLink or SuperCPU there's no need to buy JiffyDOS since it's built in).

SUPER SNAPSHOT's, 1581 fastload works fine with the FD-2000, but the turbo SAVE should be disabled.

If you're anything like me, you'll love the SWAP button. What it does is send a command for your current device #8 to swap device numbers with the FD. Press it again and it restores 8 and swaps with 9. Press it again and you're back to normal.

The FD comes with great utilities that you *will* use in the future, unlike the 1541/71/81 demo disks which were loaded with near-useless utilities. You get a file copier, disk copier and BCOPY, which is used to back up partitions to any number of other disks, allowing you to back up those huge partitions on your HD to floppies. No compression is used. MCOPY is used to backup one partition to another or to physically copy a real floppy disk to an emulation partition (and vice versa). MCOPY is also a pretty good disk copier in general. You don't have to limit it to your CMD devices.

You can also copy an emulation partition to a 1541/71 floppy disk, but I don't recommend it for this reason: the FD uses a sector interleave of 1 since its high performance doesn't demand skew schemes at all. Even with JiffyDOS or another fast loader your 1541/71 can't handle an interleave of 1 without a significant slowdown. If you regularly copy a disk from the FD to a 5.25 inch floppy, you should file copy the files to the 5.25 inch disk then MCOPY the disk back to the FD to make your master. This gives you a master with the proper skew. Don't worry – the FD will find the 6-10 skew sectors just as fast. Note: There's no problem with 1581s since 1581s have a skew of 1 also.

The DOS is just like Commodore DOS, only more powerful and functional. Creating a new subdirectory is simple, especially with any type of wedge enabled.

@md:subdir name

To change subdirectories you simply use the CD command:

@cd:subdir name

(cd means current directory)

CMD triumphed in an area where Commodore turned high-tail and ran. The 1581 has the ability to create and use subdirectories – but who on earth feels like creating one when you've got to send low/high chr$() bytes and cryptic commands? A simple command like MD and CD are a logical alternative. I've *never* bothered to create a partition or subdirectory on a 1581 because it's such a hassle. I make, use and delete subdirectories at my leisure all CMD devices.

The only programs that have problems handling a native partition or a subdirectory are those which directly search the BAM and directory blocks, expecting them to start at 18,0. Why anyone would want to do this in order to get a simple directory is beyond me. Your ML and BASIC directory routines that open $ will work anywhere on the FD. This is the way it should be done, anyway.

There's only one drawback to subdirectories on the FD. It'll take the FD about a quarter second per eight files deep to find your file. This is because the directory is read in a sequential file instead of from RAM. It's no big deal in a small subdirectory, but if you're going to copy a whole issue of LOADSTAR to an FD, put it in a ROOT (parent) directory.

You can move between partitions easily: @cp2 (cp means current partition)

The partitions are numbered and considered logically separate disks. So, formatting only affects the current partition unless a pathname dictates differently. You can't format all of a multi-partitioned FD disk accidentally.

The CMD HD series

By Jeff Jones. The CMD HD series of hard drives are elegant devices, much more than the 1571 or 1581. This superiority is not merely due to its speed and storage capacity, but because I feel that the entire concept of the drive and its operating system shows absolute forethought.

The CMD HD-40 we received last week was a bit more than I expected, in a box smaller than I expected. It's only a little larger than a 1581 yet it stores about as much information as 50 3.5-inch disks or 242 5.25-inch disks.

The manual contains most everything you'll need to use and even write machine language programs that run inside the drive's 2 MHz 64K RAM system. The manual is in a three-ring binder and and includes two floppy disks. The manual is a lot more comprehensive than the manual I got with the 1541/71/81 drives.

Is it fast? In the 128 mode and with JiffyDOS in the 64 mode, it was much faster than 1541/71/81, even when it emulated them. I copied an issue of LOADSTAR to a subdirectory and was able to boot LOADSTAR in a little under five seconds (note that with a parallel cable, it's even faster). I was able to whiz weightlessly though every program on LOADSTAR without having to wait much at all.

Though access will be faster, some programs won't get the full benefit of the hard drive's speed because of the way they get data from the drive. For instance, a BASIC program that uses GET# to read in a file might be marginally faster on a hard disk but not blazingly fast. I also noticed that the 1581 pulls off a faster block-read than the HD emulating a 1581. But of course Loading and Saving during 1581 emulation is faster. Programs that use machine language to read and write will be hindered only by their efficiency.

On the downside, the hard drive's physical superiority is hindered by the serial port. If you're not in the 128 mode, and don't have JiffyDOS, the hard drive can be as agonizingly slow as the naked 1541. With JiffyDOS, it flies. I might add that CMD would like to blame the C-64's kernal for that, not the HD. The HD is whizzing along at high speeds, but it only sends data to the computer as fast as the computer *asks* for it.

Parallel hookup to the C-64 is available for the HD through RAMLink. This just about *doubles* the speed because it bypasses Commodore's cheap serial port. Your HD now loads files at near the speed of RAMDOS. If you happen to have a SuperCPU, the parallel speed is faster than RAMDOS.

When you turn it on, you hear a whir reminiscent of the Batmobile charging for a launch from the Batcave. But you get used to it (especially when you work all day with headphones on).

FENDER'S NOTE: Right. Now, in addition to having to say everything twice because Jeff wears headphones, I have to listen to a Batmobile.

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The drive takes about ten seconds to go through its diagnostics and booting its DOS. Waiting for it to initialize will hold up all disk access until it's done, much like life with the 1581 only a little longer. Fortunately, resetting your computer doesn't force the HD to fully initialize again.

There are four membrane buttons on the face of the machine labeled:

SWAP 8 SWAP 9 WRITE PROTECT RESET

The SWAP 8 button sends a command for your current device #8 to switch device numbers with the hard drive. So a lot of programs that perhaps wouldn't support the hard drive because they work exclusively with device 8, become instantly compatible.

The hard drive is constantly spinning, so you might as well use it if it's on. You won't wear it out. LOADSTAR's BBS has been Up for about two years now. In that time the hard drive has always been on. The drive seems no worse for wear.

Speaking of file copiers, the hard disk comes formatted and containing utilities, including a file copier (FCOPY) and MCOPY (mirror copy). FCOPY can be used to file copy data to and from your hard drive. It is better to use FCOPY than the JiffyDOS built-in file copier, mainly because FCOPY reports errors, and it's a little faster because of buffering.

FCOPY is essential to hard disk use, at least for now. The only thing that comes close is the Compression Kit's file copier.

MCOPY is nicer but reminds me a lot of FCOPY. It's probably nicer because there are fewer options and a higher level of automation. It's used to backup one partition to another and to physically copy a real floppy disk to an emulation partition. You can also copy an emulation partition to a floppy disk, but I suggest file copying to floppies because the HD seems to use an interleave of 1 since its high performance doesn't demand skew schemes at all. Even with JiffyDOS or another fast loader your 1541/71 can't handle an interleave of I without a significant slowdown.

The HD DOS is where the CMD guys really impressed me. The machine is quite smart. It comes with 64K of RAM/16K ROM and a 2 MHz 6502A microprocessor. It is in essence a 64K computer.

Creating a new subdirectory is simple, especially with any type of wedge enabled.

open15,de,15,"md:subdir name":close15

With a wedge:

@md:subdir name

To change subdirectories you simply use the CD command:

@cd:subdir name

You can move between partitions easily:

@cp1

The partitions are numbered and you can't see them in a directory. Partitions are considered logically separate disks. So formatting only affects the current partition unless a pathname dictates differently. You can't format the entire hard disk accidentally. By the way, formatting even a 1581 partition takes about a half second to accomplish.

The drive has a ten-year real time clock. Every file you save has a time and date stamp on it. If you list the directory with "$=T", you can get an expanded listing that shows the time and dates. You can also specify wildcards for date and time searches, meaning you can specify that you want to see only the files saved since last Tuesday or since noon.

For those wondering about GEOS support, interestingly enough there are four lights on the left of the unit:

POWER, ACTIVITY, ERROR, and GEOS(tm)

Installing HD support on your GEOS disk is easy with the utilities supplied. The instructions are so plain and detailed that it makes it look more complicated than it really is. The HD performs pretty darn fast on GEOS applications. Not as fast as an REU but not too much slower.

As for disk size, the HD comes in sizes from 20 MB to a gigabyte. Most people will never use more than an 80-100MB drive. Commodore programs are simply smaller than PC programs. I say if you want one of these drives, *buy* one., but buy only what you need. A 100MB HD is nearly unusable for Windows, but spacious for the Commodore. You'll certainly enjoy it once you have it. Consider JiffyDOS a requirement though. I've heard mostly praise from people who own the drives. I certainly don't want to work without one now.

RAMLink

By Jeff Jones. Where do I start? Does it work exactly as advertised. YES! Is it fast? Blindingly so. Well thought out? Yes. Compatible? Haven't had a software problem yet. These guys are serious! I have a four megabyte RAMLink plugged in at my station. It's a great device, and it works identically in 64 and 128 modes.

Before I begin my list of praise, let me explain what RAMLink is in layman's terms: RAMLink is a essentially a CMD hard drive based in RAM instead of a physical spinning disk. What does this mean? Well, eliminate the physical disk and you eliminate the physical limitations of a mechanical device. RAMLink will LOAD a 200-block file in a couple of seconds. With the SuperCPU engaged, it loads and runs a 200 blocks file in less than a second. You wait for nothing. You also don't have to worry about read errors and the like. Such things don't exist on a RAM disk.

RAMLink is like a real disk drive as far as the user is concerned. Mine is set up as device 10 but I can press the SWAP 8 or SWAP 9 button and instantly make it any device number I need. If you load a directory, you get a real directory, with PRG, SEQ, REL, USR and DIR files. It feels like using a super-fast 1541 – except my main partition has about 2000 blocks free. In that partition I have many subdirectories. I'm in one now.

The other directories are simply directories for all of my other LOADSTAR-related work. Each subdirectory is kind of like a separate disk, except they share a common blocks-free count for the partition they are in. They will all be wiped out if I format the partition they're in. I only have two partitions formatted in RAMLink right now. Perhaps there'll be more later. My second partition emulates a 1541 disk, right down to the directory, BAM, and 664 blocks free. I have a few choice utilities there. Of course they're also on the hard disk, en masse, but for now, this is how I use the partition.

There is a down side to any RAM disk: When you turn off the power, all your files vanish. Who feels like copying hundreds of files to a RAM disk every time they power up? That's why I never bothered to use the 1750 RAM expansion

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– except with GEOS, where it saves sanity.

RAMLink takes care of the power problem. It takes its power straight from the wall-socket, and has faithfully kept all of my work in RAM for almost a month so far. Wait! Stop! I know what you're thinking: What about power outages? Well, unless the blackout lasts longer than 20 hours, I'm STILL safe. RAMLink has battery-backed power for $24.95 extra.

With the power problem out of the way, RAMLink becomes a PERMANENT storage device. I think of it as another hard drive, and do all of my work on it. Everyday, I copy important work to a physical disk or the hard disk before I go home, but so far, I've never needed to go to these backups. RAMLink has proven 100% reliable. Everything works EXACTLY as I expect it to – except it happens faster.

I've grown quite attached to RAMLink – even more than the HD, which is connected to RAMLink via a parallel cable. Because of RAMLink's parallel connection, the HD is roughly twice as fast. With the SuperCPU engaged, through the RAMLink, the HD becomes as fast as a native RAMLink.

The designers of RAMLink and its operating system obviously thought it all out beforehand. The manual is as thorough as the CMD HD manual, coming in a three-ring binder with well over 100 pages, complete with diagrams. HD users will notice that the manual has many similarities to the HD manual. This is because using RAMLink is the same as using a hard drive (though it naturally recognizes a couple of dedicated commands).

How fast is it in use? It took me a couple of minutes to file copy an issue of LOADSTAR to the subdirectory I'm working in. I was able to boot LOADSTAR in a little under two seconds. It would have been faster if not for the hires pic displayed for all of half a second! I was able to whiz weightlessly though every program on LOADSTAR, waiting only for screen updates. All loads were instantaneous.

As with the CMD hard drives, all access will be faster, but some programs won't get the full benefit of RAMLink's speed because of the way they get data from the drive. For instance, a BASIC program that uses GET# to read in a file might be marginally faster on RAMLink, but not blazingly fast, because BASIC is BASIC, and RAMLink will have to wait for BASIC to say "get another byte, or "get another 80 bytes." Even the tightest BASIC code won't come near the speed of ML disk access. INPUT# is significantly faster with RAMLink because it uses BASIC's ML to get 80 bytes at a time, but between those max 80 bytes is a ton of BASIC housekeeping: your own BASIC loop, the BASIC interpreter's code, etc.

The manual almost apologizes about a delay before the 64 will power up. I haven't noticed this delay, really. Seems normal power-up time. Perhaps the writer was accustomed to a computer with EPYX FASTLOAD or SUPER SNAPSHOT plugged in, where the C-64 powers up a couple of seconds faster than normal.

Speaking of SUPER SNAPSHOT, I have it plugged into the PASS-THRU port of RAMLink. That's right! You CAN use your favorite cartridge with RAMLink. I keep SUPER SNAPSHOT disabled because SNAPSHOT interferes with RAMLink's power up process. But I enable it whenever I need it. I also use RAMBOOT.O, a program I wrote, to have JiffyDOS emulate SUPER SNAPSHOT's F-Keys.

SUPER SNAPSHOT's wedge (and all I've tried) works well with RAMLink (if disk turbo routines are disabled).

RAMLink also has a RAM PORT. You can plug in your 1764, GEORAM, 1750, etc. cartridges in it. These units can be looked at as separate REUs or as part of RAMLink. You make this decision with a flick of a switch on RAMLink's control panel. So I could take Fender's 1750 expansion and plug it into my RAMLink and have a 1.5 meg RAMLink, with the RAM in the 1750 power- and battery-backed.

RAMLink also has an autoboot feature – if you wish. Every time I power up or reset my computer, a program that I wrote is Loaded from RAMLink, and executed. It happens so fast, you can't even tell when it was done.

There are three membrane buttons on the face of the machine labeled:

SWAP 8 SWAP 9 RESET

SWAP 8 sends a command for your current device #8 to swap device numbers with RAMLink. So a lot of programs that perhaps wouldn't support RAMLink, if RAMLink weren't device 8, become instantly compatible.

Unlike the HD, RAMLink's RESET button is a REAL reset button, and will reset the entire computer system, not just the drive. 64 users will appreciate this.

RAMLink is not a real drive, so it's not going to get out of alignment. It's been on constantly for almost a month and I haven't noticed any heat emanating from the unit. I don't anticipate any overheating problems because the power supplies are external. Since RAMLink is not a mechanical device, you can't wear it out by using it. MAYBE in 20 years, you'll lose an LED. Now I do all my work on the RAMLink and then file copy it to the hard disk when done. The only time I ever use a 1541 is when I copy the final version of my work to LOADSTAR, and of course, when I copy the original work from a submitter to RAMLink.

Speaking of file copiers, RAMLink comes with a few utilities on a 1541 disk, including a file copier (FCOPY) and MCOPY (mirror copy). Both of these programs work with RAMLink, the HD, 1541's, 71's and 81's.

MCOPY is used to backup one partition to another or to physically copy a real floppy disk to an emulation partition. You can also copy an emulation partition to a floppy disk, but I don't recommend it for this reason: RAMLink uses a sector interleave of 1 since its high performance doesn't demand skew schemes at all. Even with JiffyDOS or another fast loader your 1541/71 can't handle an interleave of 1 without a significant slowdown. If you regularly copy a disk from RAMLink or an HD, you should create the disk on a real drive first. This gives the proper skew. Then MCOPY the disk to your emulation partition. Don't worry: RAMLink and the HD will find one sector about as fast as any sector, especially with RAMLink, where there is no head to bounce around. It will perform just as quickly if you run the disk from the emulation partition. In any case, creating the disk on a real drive first allows you to make a truly compatible RAM master disk.

The RLDOS is just like Commodore DOS, only more powerful and functional. You might notice that while RAMLink is carrying out a command like scratching a file or copying one, the computer has to wait. This is because RAMLink is computer controlled, unlike the 1541, 71, 81 and HD, which are self- contained robots with their own 6502 CPU's. Your C-64/128 is doing the work of scratching the file since RAMLink has no CPU. But scratching a file takes less than a quarter second even with 100-block files.

Creating a new subdirectory is simple, especially with any type of wedge enabled.

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And since RAMLink comes with a wedge, you're set.

Partitions are considered logically separate disks. So formatting only affects the current partition unless a pathname dictates differently. You can't format all of RAMLink accidentally.

RAMLink has no real-time clock as the hard drive does, but I can live without it. And a cold start (sys64738) might leave device 8 or 9 the same as RAMLink after the reset IF the SWAP button was on before the reset was called. Again, no big deal.

Now we come to the nitty gritty: the buck factor. I personally think RAMLink is kinda cheap for what it does. And if you want to expand it to the full sixteen megabyte storage capacity, you can buy SIMMs (raw memory boards) anywhere. Since there's competition, you can shop for the best price. Right now you can get SIMMs as cheap as $40 per megabyte if you shop around.

I certainly don't want to work without one now. I give it two thumbs up – and a foot. My only wish is for a version of SUPER SNAPSHOT and MAVERICK that keep RAMLink in mind. RAMLink itself is perfect.

The CMD SuperCPU For The C-64

By Jeff Jones. This device is an accelerator. Accelerators are used to speed up computers. Just plug the SuperCPU into your C-64 and it seems to run 20 times faster. What's actually going on is that your computer is barely running at all. All programs run inside the cartridge, which is really a a second computer riding piggyback on your C-64/128. In sci-fi terms, you could call the accelerator a blind, deaf and mute parasite that latches onto your C-64's spinal cord and takes over as the central nervous system. Anything your C-64 eats through its serial port and other input devices is delivered straight inside the SuperCPU. Any program that runs is *not* running inside your C-64. The accelerator uses your C-64's keyboard and other I/O devices to interface with the outside world, but while the CPU is running, the C-64 is again doing next to nothing.

I stress that your C-64 isn't running because it explains why some programs won't work, even in 1 MHz mode while the SuperCPU is active.

I'll get back to programs that won't work later. The SuperCPU is a device that's very simple to use. I'd dare say that you don't need the manual. Just plug it into the back of an unpowered computer and then turn it on. The computer powers the SuperCPU. A red "turbo" light lets you know that your computer is running 20 times faster. If the light is off or appears dim, it's running slower. This usually happens during disk access. Though the SuperCPU comes with JiffyDOS, to speed your FD, HD , and JiffyDOS equipped 1541/71/81/MSDs, it manages to speed the RAMLink through sheer computing power, not JiffyDOS. Any RAMLink owner will marvel at the instant load and run of even the largest programs. The RAMLink is sped so much because it's plugged straight into the SuperCPU, and it doesn't have to fool with slowing to a slower clock speed to deal with the serial port. It's sped more because the SuperCPU simply drives it faster.

The turbo light will flicker while your serial line is high, so disk intensive operations like compiling programs are sped up only minimally. If you have a SuperCPU, the best place for disk intensive programs is in a RAMLink.

LOADSTAR's packed text, which is read and depacked on the fly, is read in faster. You would think that it would be read in at the same speed since the computer switches to slow mode while reading from disk. This isn't true because you're only in slow mode while the byte is being retrieved from the drive. Everything the computer does with that byte is done at 20 MHz.

I've noticed that RAMLink access is always faster, even when you have the SuperCPU switched to slow mode — or at least the turbo light comes on by itself during RAMLink disk access.

Why would you have the speed switched to slow mode? Frankly, I don't know. For what I do, faster is better. So far all of the games I've played have played fine in the fast mode due to good programming practice based on clock or raster time (which are the same at 20 MHz) rather than software delay loops.

I must admit that I'm spoiled. I had to go to 1 MHz mode the other day because I had to use Super Snapshot's monitor with Ebud, and I was shocked. Even RAMLink seemed to crawl when I saved my source. Listing programs seemed to go in slow motion. I have to admit I used to complain that with the SuperCPU a BASIC program lists way too fast to stop before too much scrolls by, but not anymore. My listing abilities are downright inhuman now, but in tight situations, I do use the

REM SHIFT-L

on a line to break the listing at a predetermined line. As many know, a SHIFT-L after a REM causes a syntax error during a list.

Programs That Won't Work

It's amazing how few programs have a problem with the SuperCPU. I hate to even have this section because CMD has done an amazing job as they did with RAMLink. Even I was skeptical about RAMLink's compatibility, but I find it the most reliable Commodore device ever. The SuperCPU is similarly rock solid. Most of the time the reason it crashes, it's the program's fault.

Just like your C-64 can't run MS-DOS programs, your SuperCPU can't run ML programs that were not written for the 6510 microprocessor. Undocumented opcodes, better termed *illegal* opcodes, are cute little machine language instructions, which amount to syntax errors, that *happen* to behave predictably. For instance an opcode of $F9 (I'm making this example up) might take the X register and add it with the Y register and then place it in the accumulator on a consistent basis. The 6502 only *happens* to do this, and I imagine there are some batches of 6502s that might operate differently. From the beginning, programmers were told to stay away from illegal opcodes because using them might cause problems in the future. Since the 65816 processor has *more* opcodes, a programmer's cute little trick is suddenly calling an opcode may divide a 16-bit number or load a register.

Next month I'll tell more about the SuperCPU.

Release Announcements

I received the following in my E-mail box. The following might look a lot like the announcement ran last month, but if you look closely, some of this stuff is available right now.

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March 17, 1997

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I'd like to give you an idea of what we have planned and started work on with our "new direction" we are taking at Arkanix Labs. This list of software and hardware demonstrates our devotion to this platform.

"MODplay 128 v1.0" US$19.95 Available: NOW. Playing MODs on your C128 is possible now, thanks to this program. The software supports Protracker, Sound Tracker, Star Trekker, and Noise Tracker formats. MODplay 128 can play at 4bit or 8bit achieving up to 13Khz output depending on your hardware setup. Support for up to two megabytes of REU memory for playing larger MODs. This is the basic MONO Drivers version. All programming performed by Nate Dannenberg. Available on 5.25" and 3.5" formats. Requirements: REU (17xx). Recommended: DigiMAX

"NetMail" & "NetNews" US$19.95 (package). Available: MID/LATE 1997. Internet mailer and Usenet news reader software. Robin Harbron will handle the programming tasks here. Requirements: NetStack, Swiftlink/Turbo232, REU (17xx)

"Sound Studio 128 v3.8" US$ FREE. Available: NOW. A free copy is available from the Arkanix Labs homepage. Programmed by Nate Dannenberg.

"Sound Studio 128 v4.0" US $19.95. Available: LATE 1997/EARLY 1998. All programming to be handled by Nate Dannenberg. Requirements: REU (17xx). Recommended: Dual SID

"Super Lazer Duel" US $19.95 Available: LATE 1997/EARLY 1998. This version is what the original should have been, with new features like audio samples, animations, level editor, much improved game play, difficulty levels, plus more. Plain C64 and SuperCPU 64 version planned. Jon Mines will be handling the programming here.

- Requirements: NetStack and SwiftLink/ Turbo232 (for Internet play only)

"Crimson Twilight" US $19.95 Available: MID/LATE 1998. This will possibly be the first in a series of role playing/adventure games. Plans for a "talkie" version for SuperCPU are still alive. The programming will be handled by Jon Mines and Nate Dannenberg. Requirements: REU (512k+) or RAMLink. Recommended: CMD HD

"Gamepack #1" US $19.95. Available: MID 1997. Games... included are: Lazer Duel, Acid Runner, Slaterman, Drip, Gangster, Ghosttown, Army Days, The Castle, TimTris, and Hans Kloss

"Gamepack #2" US $19.95. Available: MID 1997. Games included are: Hyper Cars, Castle, Lazarus, Arctic Hunt, Madrax, Connection, The King, Time Traveller, Nocturno, and Cosmic Hero

"Gamepack #3" US $19.95. Available: LATE 1997. Games... included are: Colormania, Coldiarus, World Conquest, Memomania, Lingos, Zytron MegaBlast, Kulfon in Demonland, Valdgir's Swords, and Mean Car

"8BSS" US $49.95. Available: NOW. An 8bit stereo sampler for C64/C128. Sound Studio 128 v3.8 is included with this hardware. This board also works with AVLink 128. Programming information available upon request, or from Arkanix Labs homepage.Designed by Nate Dannenberg.

"DigiMAX" US$24.95. Available: NOW. A four channel digital/analog converter for C64/C128. Programming information available upon request, or from Arkanix Labs homepage. Designed by Nate Dannenberg.

"Dual SID" US $34.95. Available: NOW. Our version of a board to give the C64/C128 stereo sound. Works with Sound Studio 128 v3.8 and above, AVLink 128, MODplay 128 Stereo, and all of Mark A. Dickenson's Stereo programs. This board is compatible with RAMLink when addressed at $D700. Two different versions of the board are available to accommodate CSG 6581 and CSG 8580 SID chips. Requirements: C64/C128, one extra SID chip which should be identical to SID on motherboard

"PowerSID 2400" US$ N/A Available: EARLY 1998 Adds 8 SIDs to produce 27 voices of polyphony sound on C64/C128. Designed by Nate Dannenberg and Shaun Halstead

"PowerSID 4000" US$ N/A Available: EARLY 1998. Combines the Enhanced 8/16 board with PowerSID 2400 to create the ultimate stereo sampling hardware for C64/C128. Designed by Nate Dannenberg and Shaun Halstead.

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Letters To The Editor

avardy@morgan.ucs.mun.ca: You know the files on LOADSTAR disks that start with "p." What format are they? They are in no format I can recognize, but I think they are just document files, as in the first one is p.discovery.

Kind of hard to find something you remember reading in one LOADSTAR issue without having to stick every LOADSTAR disk in the drive, boot it up, and then load every document "read" file on disk and search manually.

Jeff: These are packed text files. You can read them with STAR LOADER, which also saves them as PETASCII. You can also read them with LOADSTAR Reader, on every LOADSTAR disk.

STAR EXTRA Diskussion

Robin Harbron macbeth@Quetico.tbaytel.net: I subscribe to both LOADSTAR and LOADSTAR Letter. I enjoy them both very much (LOADSTAR Letter just keeps getting better).

Jeff: Whew! I am really trying.

Robin: I've noticed you've got all three of my demos on LOADSTAR Extra (or star extra - sorry keep forgetting the name). I'm honored that they're included, and not part of the other stuff that doesn't make it on. However, I do have some concerns.

The price: I've noticed you've dropped it down to $12, from $20 (it was $20, wasn't it?). That's better, but still it does certainly seem like you're making money from it, for a very minimal amount of work.

Jeff: Actually the $20 was a typo. I made the ad using a previous ad as a template and neglected to change the 3.5-inch price. I was very embarrassed. Star Extra was always $12.00 as announced in LOADSTAR.

Robin: Whew, that's a relief. I was finding that VERY hard to justify.

Jeff: Star Extra also takes a lot of time to lay out and get everything to work on the SuperCPU. That's why one or more of your demos is different in size.

Robin: Right, I think one of mine wouldn't decompress or setup properly at 20 MHz.

Jeff: Actually the packers that won't decompress properly will not work with the SuperCPU engaged at all, fast or slow.

(Continued on page 13)

(Continued from page 12)
This is most likely due to illegal opcodes. Then there's the text that has to be written for each feature. On the Star Extra #3, I have two original ML programs of my own. Plus a bunch of my source files.

Robin: A very good gesture. Looking forward to seeing some of that source :)

Jeff: Back to the price: I am paid a premium price per hour for putting them together. I'm not going to dare suggest there's no profit, but it costs us far more than two bits (the cost of a disk in bulk) to get disks out of the building.

Robin: I'm happy to have more people seeing my demos, and hopefully reading the scriptures there. And I never expected to make money from these demos. I can't exactly express my feelings, but I hope I can one day.

You didn't ask permission, as a courtesy. Yes, all this stuff is on the net to spread, but the objection is that you're making some money off of it. So you should ask. No, you don't have to, but you should.

Jeff: You're right.

Robin: All this stuff isn't public domain. It isn't commercial, and it isn't specified (because I don't want to clutter up my "art" with legal stuff). My understanding is that any creation of anyone is copyrighted by them automatically, by the law. It only becomes public domain if the author expressly states it, or if he's dead 50 years. Freely distributable, I guess, is what most demo scene stuff is.

Jeff: Like any PD collection, we state that the PD on the disk is distributable or we state what the author states. The only thing we restrict is our menu system since we obviously don't want anyone passing off God knows what as LOADSTAR.

Robin: Anyway, I appreciate your work on all your Commodore products, and I will be a loyal subscriber to the end. But please, ask before you use our stuff.

Jeff: Better yet, E-mail your new stuff to me. I'll make a formal request for each thing we want to use. I confess, my life sucks, and I barely have time to do anything I want. I regularly leave things undone that I mean to get done. That includes my rarely visited "answer these" E-mail folder

Robin: I do encourage you to keep supporting the demo scene as well. I'm sure LOADSTAR has helped encourage some people to become viewers, maybe even makers.

Robin Harbron macbeth@tbaytel.net

CommNet: NovaTerm With SuperCPU

By CAPED CRUSADER @ CAV.

Note from Jeff: I'm not sure who's talking, so I'm labeling them person one and Nick Rossi.

Person one:: I was curious to see how many people own a SuperCPU 64 out there. Has anyone started programming anything as of yet?

Nick Rossi: I've been using one for about a month now, and it's been great. Development work goes so much faster now.

Novaterm 9.6 is accelerated so much that the 80-column emulation in hi-res graphics mode has no problem keeping up with very fast speeds (up to 57.6kbps without flow control). Enabling memory optimization made it even faster, keeping up close to (but not quite) 115k. This is with CMD's new Turbo232 cartridge. These speeds are entirely adequate for 28.8 modems.

Eventually I'm going to try to write some time-critical code in 65c816 instructions, which should add even more to the performance.

Person one: Great. I cannot wait to see some modifications. The SuperCpu 64 has made a difference with NovaTerm 9.6, I enjoy both of them (SuperCPU & NovaTerm). I'll definitely have to order one of those Turbo232s soon...Like right now or something if they are available.

Nick Rossi: You can enable the optimization yourself by typing the following line before running Novaterm:
poke53374,0:poke53364,0:poke53375,0

In the patch B update to 9.6, this is done automatically during startup.
(The only other difference in patch B is the Turbo232 driver.)
Nick

Parsec Revisited

By: CAPED CRUSADER @ CAV.
On: Tue Mar 11, 1997 3:50 AM

Did anyone else out there have a subscription to Twin Cities 128/64 several years ago and felt cheated when the issues stopped coming but you still had a subscription? I sorta wrote John Brown off along with the Diehard subscriptions and didn't figure we'd hear from him again.

Well, I read on Usenet I think it was, a while back from one of John Brown's friends that John is working hard to honor unfilled subscriptions to Twin Cities 128.

It was about a year ago that I got my last issue and that issue was about a year late getting mailed out. hehe But sure enough, I got two issues last week, issue 35 and 36 and these issues are about 3 years old! Plus, the issue 35 was the late issue that I got about a year ago, so it was a duplicate.

But I think I can see Mr. Brown's motives for mailing out these old issues to us subscribers. He also enclosed information about his BBS service. It seems he has a BBS system that you can ftp or telnet to via Internet and download many Commodore files. Only catch it seems is access will cost you $10 a month. Heck, it might be worth it, maybe someone here will check it out. But at least he'd have a much harder time drumming up any business if he left everyone hanging like Brian Crosthwaite did at Diehard, even if John is about 3 years late.

By COOKIE @ CAV

I too just received my back issues of Twin cities 64/128. Mr. J. Brown over these past years did not even have the courtesy to answer my phone calls nor any of my letters. I had given up on receiving the items that I had paid for.

Would I trust JBrown/ Parsec to any future orders. The answer is No! I have taken Mr. JBrown and his company off my quality list and he now appears on the other list (call it what you want).
Cookie

By KEYMASTER @ TMX
On Thu Mar 13, 1997 3:25 AM
Subtopic: John Brown
Posted On: Mon Mar 10, 1997 2:16 PM

I USED to be a subscriber to Twin Cities. And boy did I feel cheated. I too only got a few mags. And also about a year ago I received another issue, but that was about it.

I used to read on Genie's BBS about things that had happened with or about him. I remember a falling out he had with Jeff Jones of LOADSTAR.

I don't believe I would send him $10.00 per month for anything.

By KEYMASTER @ TMX
On Sat Mar 15, 1997 5:28 AM
Subtopic: I second that!
Posted On: Wed Mar 12, 1997 7:55 PM

Cookie - I second that! I sent him a letter and never actually heard from him again. He did send me a couple of issues about a year ago.

Why Ask Why? (Junk E-mail)

If love is blind, why is lingerie so popular?

Why do you need a driver's license to buy liquor when you can't drink and drive?

Why isn't phonetic spelled the way it sounds?

Why are there interstate highways in Hawaii?

Why are there flotation devices under plane seats instead of parachutes?

Why are cigarettes sold in gas stations when smoking is prohibited there?

Do you need a silencer if you are going to shoot a mime?

Have you ever imagined a world with no hypothetical situations?

How does the guy who drives the snowplow get to work in the mornings?

If 7-11 is open 24 hours a day, 365 days a year, why are there locks on the doors?

If a cow laughed, would milk come out her nose?

If nothing ever sticks to TEFLON, how do they make TEFLON stick to the pan?

If you tied buttered toast to the back of a cat and dropped it from a height, what would happen?

If you're in a vehicle going the speed of light, what happens when you turn on the headlights?

You know how most packages say "Open here". What is the protocol if the package says, "Open somewhere else"?

Why do they put Braille dots on the keypad of the drive-up ATM?

Why do we drive on parkways and park on driveways?

Why is brassiere singular and panties plural?

Why is it that when you transport something by car, it's called a shipment, but when you transport something by ship, it's called cargo?

You know that little indestructible black box that is used on planes, why can't they make the whole plane out of the same substance?

Why is it that when you're driving and looking for an address, you turn down the volume on the radio?

Why does the computer Auto-save while you are trying to delete?

Forwarded by Kevin@Softdisk.com

LOADSTAR LETTER #43

606 Common Street, Shreveport LA 71101

- Commodore News
- Commodore Views
- All Commodore

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